What Is Claimed Is:

1.   A method of determining factors for insulin therapy comprising the steps of:

storing at least one data set in a memory device, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period;

providing an insulin sensitivity factor for the patient wherein the initial insulin sensitivity factor can be one of an estimated insulin sensitivity factor, the most recently known insulin sensitivity factor, and an initial insulin sensitivity factor; and

determining a carbohydrate to insulin ratio for each data set using the insulin sensitivity factor.

2.   A method as claimed in claim 1, further comprising the step of determining a weighted average for a carbohydrate to insulin ratio for a selected time period using the carbohydrate to insulin ratio for each of respective data sets.

3.   A method as claimed in claim 1, further comprising the step of determining an insulin sensitivity factor for each data set using a carbohydrate to insulin ratio for the patient wherein the carbohydrate to insulin ratio can be an estimated carbohydrate to insulin ratio, the most recently known carbohydrate to insulin ratio, an initial carbohydrate to insulin ratio, the carbohydrate to insulin ratio determined for a data set, and a weighted average for a carbohydrate to insulin ratio for a selected time period using the carbohydrate to insulin ratio for each of respective data sets.

4.   A method as claimed in claim 3, further comprising the step of determining a weighted average for an insulin sensitivity factor for a selected time period using the insulin sensitivity factor for each of respective data sets.

5.   An apparatus for determining factors for insulin therapy comprising:

a memory device for storing at least one data set, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period; and

a processing device programmable to use an insulin sensitivity factor for the patient wherein the initial insulin sensitivity factor can be one of an estimated insulin sensitivity factor, the most recently known insulin sensitivity factor, and an initial insulin sensitivity factor, and to determine a carbohydrate to insulin ratio for each data set using the insulin sensitivity factor.

6.   An apparatus as claimed in claim 5, wherein said processing device is programmable to determine a weighted average for a carbohydrate to insulin ratio for a selected time period using the carbohydrate to insulin ratio for each of respective data sets.

7.   An apparatus as claimed in claim 5, wherein said processing device is programmable to determine an insulin sensitivity factor for each data set using a carbohydrate to insulin ratio for the patient wherein the carbohydrate to insulin ratio can be an estimated carbohydrate to insulin ratio, the most recently known carbohydrate to insulin ratio, an initial carbohydrate to insulin ratio, the carbohydrate to insulin ratio determined for a data set, and a weighted average for a carbohydrate to insulin ratio for a selected time period using the carbohydrate to insulin ratio for each of respective data sets.

8.   An apparatus as claimed in claim 7, wherein said processing device is programmable to determine a weighted average for an insulin sensitivity factor for a selected time period using the insulin sensitivity factor for each of respective data sets.

9.   An apparatus as claimed in claim 5, wherein said processing device is selected from the group consisting of a personal computer, a personal data assistant, a hand held computing device, a blood glucose monitor, an infusion pump, a medication delivery pen, a meter, a calculator, a therapeutic device used for managing a patient's blood glucose levels, a diagnostic device used for managing a patient's blood glucose levels, and an informational device used for managing a patient's blood glucose levels.

10.   A method of determining factors for insulin therapy comprising the steps of:

storing at least one data set in a memory device, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period;

calculating a delta blood glucose level corresponding to the difference between the blood glucose readings taken, respectively, at substantially the beginning of and substantially the end of the selected period;

determining a correct insulin amount using the delta blood glucose level, an insulin sensitivity factor, and the amount of insulin administered to the patient during the selected period; and

determining a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount and the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days.

11.   A method as claimed in claim 10, further comprising the step of determining a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

12.   A method as claimed in claim 11, wherein the step of determining a carbohydrate to insulin ratio for the selected period comprises the step of calculating a weighted average of the plurality of daily carbohydrate to insulin ratios.

13.   A method as claimed in claim 10, further comprising the step of generating an initial estimate of the insulin sensitivity factor using at least one number selected from the range of numbers equal to or between 1500 and 1800, and dividing the at least one number by the daily insulin dose.

14.   A method as claimed in claim 10, further comprising the steps of:
      determining the amount of insulin not needed for carbohydrates consumed on a given day; and
      determining an estimate of the insulin sensitivity factor for the given day using the delta blood glucose divided by the amount of insulin not needed for the given day.

15.   A method as claimed in claim 14, wherein the determining step for determining the amount of insulin not needed for carbohydrates consumed on a given day comprises the steps of:
      determining a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios;
      dividing the value corresponding to the patient's food intake by the carbohydrate to insulin ratio for the selected period, the value for the patient's food intake being the value for the selected period obtained from the data set of one of the plurality of days corresponding to the given day; and
      subtracting the result of the dividing step from the an estimate of the insulin sensitivity factor for the given day.

16.   A method as claimed in claim 14, further comprising the step of determining the insulin sensitivity factor for the selected period from an average of the insulin sensitivity factor for each of a plurality of days.

17.   A method as claimed in claim 16, wherein the step of determining an insulin sensitivity factor for the selected period comprises the step of calculating a weighted average of the insulin sensitivity factor for each of a plurality of days.

18.   A method as claimed in claim 10, further comprising the step of receiving input signals from a user input device providing user input information selected from the group consisting of the amount of food eaten in the selected period in grams, bread exchanges for food eaten in the selected period, and a carbohydrate-to-insulin ratio supplied by a health care provider.

19.   A method as claimed in claim 10, further comprising the step of performing a conversion operation to convert the user input information to a different unit of measurement, the conversion operation selected from the group consisting of bread exchanges to grams, grams to bread exchanges, units insulin to milligrams, and milligrams to units insulin.

20.   An apparatus for determining factors for insulin therapy comprising:

a memory device for storing at least one data set in a memory device, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period; and

a processing device connected to the memory device and being programmable to calculate a delta blood glucose level corresponding to the difference between the blood glucose readings taken, respectively, at substantially the beginning of and substantially the end of the selected period, to determine a correct insulin amount using the delta blood glucose level, an insulin sensitivity factor, and the amount of insulin administered to the patient during the selected period, and to determine a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a

plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount and the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days.

21. An apparatus as claimed in claim 20, wherein the processing device is programmable to determine a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

22. An apparatus as claimed in claim 20, wherein the processing device is programmable to determine a carbohydrate to insulin ratio for the selected period by calculating a weighted average of the plurality of daily carbohydrate to insulin ratios.

23. An apparatus as claimed in claim 20, wherein the processing device is programmable to generate an initial estimate of the insulin sensitivity factor using at least one number selected from the range of numbers equal to or between 1500 and 1800, and dividing the at least one number by the daily insulin dose.

24. An apparatus as claimed in claim 20, wherein the processing device is further programmable to determine the amount of insulin not needed for carbohydrates consumed on a given day, and an estimate of the insulin sensitivity factor for the given day using the delta blood glucose divided by the amount of insulin not needed for the given day.

25. An apparatus as claimed in claim 20, wherein the processing device is programmable to determine the amount of insulin not needed for carbohydrates consumed on a given day by determining a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios, dividing the value corresponding to the patient's food intake by the carbohydrate to insulin ratio for the selected period, the value for the patient's food intake being the value for the selected period obtained from the data set of one of the plurality of days

corresponding to the given day, and subtracting the result of the dividing step from the an estimate of the insulin sensitivity factor for the given day.

26.   An apparatus as claimed in claim 20, wherein the processing device is programmable to determine the insulin sensitivity factor for the selected period from an average of the insulin sensitivity factor for each of a plurality of days.

27.   An apparatus as claimed in claim 20, wherein the processing device is programmable to determine an insulin sensitivity factor for the selected period by calculating a weighted average of the insulin sensitivity factor for each of a plurality of days.

28.   A method of determining factors used for insulin therapy comprising the steps of:

storing at least one data set in a memory device, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period;

-     calculating a delta blood glucose level corresponding to the difference between the blood glucose readings taken, respectively, at substantially the beginning of and substantially the end of the selected period; and

determining a correct insulin amount using the delta blood glucose level divided by an insulin sensitivity factor, and the result of the division being added to the amount of

insulin administered to the patient during the selected period.

29.   A method as claimed in claim 28, wherein the selected period of time corresponds to a period of time occurring within one day.

30.   A method as claimed in claim 28, wherein the selected period of time comprises one meal time selected from the group consisting of breakfast, lunch, dinner, or snack.

31.   A method as claimed in claim 28, further comprising the step of generating an initial estimate of the insulin sensitivity factor using at least one number selected from the range of numbers equal to or between 1500 and 1800, and dividing the at least one number by the daily insulin dose.

32.   A method as claimed in claim 28, further comprising the steps of:

determining a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount and the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days; and

determining a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

33.   A method as claimed in claim 32, wherein the step of determining a carbohydrate to insulin ratio for the selected period comprises the step of calculating a weighted average of the plurality of daily carbohydrate to insulin ratios.

34.   A method as claimed in claim 28, further comprising the step of determining a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount divided into the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days.

35. A method as claimed in claim 34, further comprising the step of determining a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

36. A method as claimed in claim 35, further comprising the steps of:

determining the amount of insulin not needed for carbohydrates consumed on a given day; and

determining an estimate of the insulin sensitivity factor for the given day using the delta blood glucose divided by the amount of insulin not needed for the given day.

37. A method as claimed in claim 36, wherein the determining step for determining the amount of insulin not needed for carbohydrates consumed on a given day comprises the steps of:

dividing the value corresponding to the patient's food intake by the carbohydrate to insulin ratio for the selected period, the value for the patient's food intake being the value for the selected period obtained from the data set of one of the plurality of days corresponding to the given day; and

subtracting the result of the dividing step from the an estimate of the insulin sensitivity factor for the given day.

38. A method as claimed in claim 37, further comprising the step of generating an initial estimate of the insulin sensitivity factor using at least one number selected from the range of numbers equal to or between 1500 and 1800, and dividing the at least one number by the daily insulin dose.

39. A method as claimed in claim 36, further comprising the step of determining the insulin sensitivity factor for the selected period from an average of the insulin sensitivity factor for each of a plurality of days.

40.   A method as claimed in claim 39, wherein the step of determining an insulin sensitivity factor for the selected period comprises the step of calculating a weighted average of the insulin sensitivity factor for each of a plurality of days.

41.   A computer readable medium of instructions to determine factors used for insulin therapy comprising:

a first set of instructions to store at least one data set in a memory device, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period;

a second set of instructions to calculate a delta blood glucose level corresponding to the difference between the blood glucose readings taken, respectively, at substantially the beginning of and substantially the end of the selected period; and

a third set of instructions to determine a correct insulin amount using the delta blood glucose level divided by an insulin sensitivity factor, and the result of the division being added to the amount of insulin administered to the patient during the selected period.

42.   A computer readable medium as claimed in claim 41, wherein the selected period of time corresponds to a period of time occurring within one day.

43.   A computer readable medium as claimed in claim 41, wherein the selected period of time comprises one meal time selected from the group consisting of breakfast, lunch, dinner, or snack.

44.   A computer readable medium as claimed in claim 41, further comprising a fourth set of instructions to generate an initial estimate of the insulin sensitivity factor

using at least one number selected from the range of numbers equal to or between 1500 and 1800, and dividing the at least one number by the daily insulin dose.

45.   A computer readable medium as claimed in claim 41, further comprising:

a fourth set of instructions to determine a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount and the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days; and

a fifth set of instructions to determine a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

46.   A computer readable medium as claimed in claim 45, wherein said fifth set of instructions comprises instructions to calculate a weighted average of the plurality of daily carbohydrate to insulin ratios.

47.   A computer readable medium as claimed in claim 41, further comprising a fourth set of instructions to determine a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount divided into the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days.

48.   A computer readable medium as claimed in claim 47, further comprising a fifth set of instructions to determine a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

49.   A computer readable medium as claimed in claim 48, further comprising:

a sixth set of instructions to determine the amount of insulin not needed for carbohydrates consumed on a given day; and

a seventh set of instructions to determine an estimate of the insulin sensitivity factor for the given day using the delta blood glucose divided by the amount of insulin not needed for the given day.

50. A computer readable medium as claimed in claim 49, further comprising an eighth set of instructions to determine the insulin sensitivity factor for the selected period from an average of the insulin sensitivity factor for each of a plurality of days.

51. A computer readable medium as claimed in claim 50, wherein the eighth set of instructions comprises instructions to determine an insulin sensitivity factor for the selected period by calculating a weighted average of the insulin sensitivity factor for each of a plurality of days.

52. An apparatus for determining factors used for insulin therapy comprising:

a memory device for storing at least one data set in a memory device, the data set comprising blood glucose readings for, respectively, substantially the beginning of and substantially the end of a selected period of time, a value corresponding to the patient's food intake for the selected period, and the amount of insulin administered to the patient during the selected period; and

a processing device connected to the memory device and being programmable to calculate a delta blood glucose level corresponding to the difference between the blood glucose readings taken, respectively, at substantially the beginning of and substantially the end of the selected period, and to determine a correct insulin amount using the delta blood glucose level divided by an insulin sensitivity factor, and the result of the division being added to the amount of insulin administered to the patient during the selected period.

53. An apparatus as claimed in claim 52, wherein the selected period of time corresponds to a period of time occurring within one day.

54.   An apparatus as claimed in claim 52, wherein the selected period of time comprises one meal time selected from the group consisting of breakfast, lunch, dinner, or snack.

55.   An apparatus as claimed in claim 52, wherein the processing device is further programmable to generating an initial estimate of the insulin sensitivity factor using at least one number selected from the range of numbers equal to or between 1500 and 1800, and dividing the at least one number by the daily insulin dose

56.   An apparatus as claimed in claim 52, wherein the processing device is programmable to   determine a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount and the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days, and

        determine a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

57.   An apparatus as claimed in claim 56, wherein the processing device is programmable to wherein the step of determining a carbohydrate to insulin ratio for the selected period comprises the step of calculating a weighted average of the plurality of daily carbohydrate to insulin ratios

58.   An apparatus as claimed in claim 52, further comprising the step of determining a plurality of daily carbohydrate to insulin ratios corresponding to respective ones of a plurality of days, the daily carbohydrate to insulin ratios each being based on the correct insulin amount divided into the value corresponding to the patient's food intake for the selected period from the data set of the corresponding one of the plurality of days.

59.   An apparatus as claimed in claim 58, further comprising the step of determining a carbohydrate to insulin ratio for the selected period from an average of the daily carbohydrate to insulin ratios.

60.   An apparatus as claimed in claim 59, further comprising the steps of:
        determining the amount of insulin not needed for carbohydrates consumed on a given day; and
        determining an estimate of the insulin sensitivity factor for the given day using the delta blood glucose divided by the amount of insulin not needed for the given day.

61.   An apparatus as claimed in claim 60, further comprising the step of determining the insulin sensitivity factor for the selected period from an average of the insulin sensitivity factor for each of a plurality of days.

62.   An apparatus as claimed in claim 61, wherein the step of determining an insulin sensitivity factor for the selected period comprises the step of calculating a weighted average of the insulin sensitivity factor for each of a plurality of days.